REMARKS

This is a full and timely response to the non-final Office Action of June 22, 2009. Reexamination, reconsideration, and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this Fifth Response, claims 1-8 and 10-19 are pending in this application, and claims 1, 6, and 19 are directly amended herein. It is believed that the foregoing amendments add no new matter to the present application.

Response to §103 Rejections

In order for a claim to be properly rejected under 35 U.S.C. §103, the combined teachings of the prior art references must suggest all features of the claimed invention to one of ordinary skill in the art. See, *e.g.*, *In Re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981). In addition, "(t)he PTO has the burden under section 103 to establish a *prima facie* case of obviousness." *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Claim 1

Claim 1 presently stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* (U.S. Patent No. 6,868,509) in view of *Heeren* (U.S. Patent No. 6,311,288) and *Dantu* (U.S. Patent No. 7,167,443). Claim 1 presently reads as follows:

> 1. A network router, comprising:
> memory;
> a layer 1 portion having a first communication interface and a second communication interface;
> a layer 2 portion;
> a layer 3 portion having a layer 3 protocol stack, said layer 3 protocol stack having a routing table stored in said memory and specifying, for a particular destination, a data path from said layer 3 portion to said layer 2 portion, said layer 3 protocol stack configured to provide a plurality of data packets destined for the particular destination and to route through said data path each of said data packets based on said routing table, **said layer 3 protocol stack further configured to detect an error condition; and**
> **switching logic configured to automatically initiate a layer 2 switch for said layer 2 portion of said network router in response to a detection of said error condition by said layer 3 protocol stack such that said layer 2 portion interfaces a plurality of said data packets with said second communication interface in lieu of said first communication interface, wherein said layer 2 switch is transparent to said layer 3 portion,** wherein said layer 2 portion is configured to interface at least one of said data packets with said first communication interface prior to said layer 2 switch, wherein said first communication interface is configured to transmit said at least one data packet to a second router via a first protocol over a first data path through a first network, and wherein said second communication interface is configured to transmit said plurality of said data packets to said second router via a second protocol over a second data path through a second network. (Emphasis added).

Applicants respectfully assert that the alleged combination of *Gale, Heeren*, and *Dantu* fails to suggest at least the features of claim 1 highlighted hereinabove. Thus, the 35 U.S.C. §103 rejection of claim 1 should be withdrawn.

In particular, it is candidly admitted in the Office Action that *Gale* and *Heeren* fail to teach "said layer 3 protocol stack further configured to detect an error condition and the respective layer 2 switch for said layer 2 portion of said network router in response to such error condition."

However, it is alleged in the Office Action that the features missing from *Gale* and *Heeren* are suggested by *Dantu*. Applicants respectfully disagree.

In this regard, *Dantu* teaches "the overhead signaling that occurs in the described embodiment to advise an ingress node of a communication link failure occurs at layer 2 even though the condition may be a layer 1 or a layer 3 condition." Column 18, lines 13-16. Such section of *Dantu* appears to describe the manner in which one node (*i.e.*, the "exemplary node 344") may ***inform*** another node (*i.e.*, the "ingress node") of the "layer 3 condition." However, there is nothing in *Dantu* to indicate that either node performs, in response to the "layer 3 condition," a "layer 2 switch" that is transparent to layer 3. In fact, *Dantu* appears to suggest a layer 3 switch in response to the alleged "error condition" instead of a "layer 2 switch." In this regard, upon receiving notification of the alleged "error condition," *Dantu* specifically teaches that a layer 3 switch is performed (*i.e.*, the forwarding/routing table is updated), and such teachings would lead one of ordinary skill in the art away from the "layer 2 switch" recited in claim 1. See Figure 10, step 1006, of *Dantu*. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 2 F.3d 551, 31 U.S.P.Q.2d 1130, 1131 (Fed. Cir. 1994). Accordingly, when the teachings of the prior art are properly considered as a whole, it is readily apparent that the teaching at column 18, lines 13-16, of *Dantu* is insufficient to suggest performing, in response to a detection of a "layer 3 error condition," a "layer 2 switch" that is transparent to layer 3, and the teachings of the cited art as a whole, in fact, teach against such features.

It is further alleged in the Office Action that performing a "layer 2 switch" that is transparent to the "layer 3 portion" is well-known, as evidenced by *Heeren*. Applicants agree that it is known for some backup switches to be transparent to layer 3. In fact, in the instant application, an example is given in which a conventional digital service unit (DSU) performs a layer 1 backup

switch that is transparent to layer 3. See Paragraph [0027] of the instant application. *Heeren*, like the foregoing example described by the instant application, appears to detect a link failure at layer 1 (see column 3, line 37 of *Heeren*) and performs a backup switch that appears to be transparent to layer 3. However, there is nothing in *Heeren* to indicate that layer 3 detects the error condition. Indeed, none of the references cited in the Office Action teach performing any backup switch that is transparent to layer 3 when a "layer 3 protocol stack" detects a "layer 3 error condition." Thus, Applicants submit that the alleged combination fails to suggest at least "***said layer 3 protocol stack further configured to detect a layer 3 error condition***" and "switch logic configured to automatically initiate a layer 2 switch for said layer 2 portion of said network router in response to a detection of said error condition by said layer 3 protocol stack… ***wherein said layer 2 switch is transparent to said layer 3 portion***," as recited by claim 1. (Emphasis added). For at least the above reasons, Applicants respectfully assert that the 35 U.S.C. §103 rejection of claim 1 is improper and should be withdrawn.

In addition, it is alleged in the Office Action that a "layer 3 portion" of *Dantu* detects the alleged "error condition." Pages 10-11. Applicants respectfully disagree. *Dantu* teaches that the "error condition" may be a "layer 3 condition," but *Dantu* fails to teach that the detection is performed by any "layer 3 portion." Instead, it appears that computer instructions outside of layer 3 enable a processor to detect the "error condition," so that the entire network can respond to the "error condition" in less than 50 milliseconds, which apparently is also the reason for using layer 2 signaling of the "error condition." See column 17, lines 35-38, and column 18, line 62, through column 19, line 2. Indeed, *Dantu* specifically teaches that if layer 3 detects the link failure, then it would take "tens of seconds or even minutes." See column 8, lines 21-34. Moreover, a "layer 3 protocol stack" is clearly not detecting the alleged "error condition" in *Dantu*. In fact, as indicated above, *Dantu* provides specific reasons for not using a "layer 3 protocol stack" to detect the alleged "error condition." Accordingly, Applicants respectfully assert that, even if it is assumed for

- 13 -

the sake of argument that the alleged combination is proper, the alleged combination fails to suggest and, in fact, teaches against at least "said **layer 3 protocol stack** further configured to detect a layer 3 error condition," as recited by claim 1. (Emphasis added).

For at least the above reasons, Applicants respectfully assert that the alleged combination of *Gale*, *Heeren*, and *Dantu* fails to suggest each feature of claim 1. Accordingly, the 35 U.S.C. §103 rejection of claim 1 should be withdrawn.

Claims 2-5, 17, and 18

Claims 2, 4, 5, 17, and 18 presently stand rejected in the Office Action under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*. In addition, claim 3 presently stands rejected in the Office Action under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*, further in view of *Singh* (U.S. Patent Publication No. 2003/0088698). Applicants submit that the pending dependent claims 2-5, 17, and 18 contain all features of their respective independent claim 1. Since claim 1 should be allowed, as argued hereinabove, pending dependent claims 2-5, 17, and 18 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 6

Claim 6 presently stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*. Claim 6 reads as follows:

> 6. A network router, comprising:
> memory;
> a layer 3 protocol stack configured to provide a plurality of data packets to be transmitted by said network router to a second router, the layer 3 protocol stack having a routing table stored in said memory and specifying a data path for routing said plurality of data packets to said second router, the layer 3 protocol stack configured to insert, into each of said plurality of data packets, route information indicative of said data path based on said routing table, **the layer 3 protocol stack further configured to detect a layer 3 error condition**;

- 14 -

a first layer 2 protocol stack;

a second layer 2 protocol stack;

a plurality of layer 3 network interfaces configured to receive data packets from said layer 3 protocol stack, wherein said layer 3 protocol stack is configured to provide each of said plurality of data packets to one of said layer 3 network interfaces; and

layer 2 switching logic configured to receive each of said plurality of data packets from said one layer 3 network interface, said layer 2 switching logic configured to provide at least one of said plurality of data packets to said first layer 2 protocol stack such that said at least one of said plurality of data packets is transmitted via a primary network and a first protocol to said second router, **said layer 2 switching logic configured to perform a layer 2 switch in said network router in response to a detection of said error condition by said layer 3 protocol stack such that said layer 2 switching logic provides, in response to said detection, at least one other of said plurality of data packets to said second layer 2 protocol stack such that said at least one other of said plurality of data packets is transmitted via a secondary network and a second protocol to said second router, wherein said layer 2 switch is transparent to said layer 3 protocol stack**. (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Gale* and *Heeren* and *Dantu* fails to suggest at least the features of claim 6 highlighted above. Thus, the 35 U.S.C. §103 rejection of claim 6 should be withdrawn.

Claims 7, 8, and 10

Claims 7, 8, and 10 presently stand rejected in the Office Action under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*. Applicants submit that the pending dependent claims 7, 8, and 10 contain all features of their respective independent claim 6. Since claim 6 should be allowed, as argued hereinabove, pending dependent claims 7, 8, and 10 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

<u>Claim 11</u>

Claim 11 presently stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*. Claim 11 reads as follows:

> 11. A method for use in a network router, comprising the steps of:
> providing data packets from a layer 3 portion of said network router, said layer 3 portion including a routing table specifying route information for said data packets;
> inserting said route information into each of said data packets;
> interfacing, via a layer 2 portion of said network router, a first plurality of said data packets with a first communication interface of a layer 1 portion of said network router;
> communicating said first plurality of data packets from said first communication interface over a primary data path to a second router via a first protocol;
> ***detecting, via said layer 3 portion of said network router, a layer 3 error condition associated with said primary data path;***
> ***automatically performing a layer 2 switch in said network router in response to said detecting step such that said layer 2 portion of said network router interfaces a second plurality of said data packets with a second communication interface of said layer 1 portion***; and
> communicating said second plurality of data packets from said second communication interface over a backup data path to said second router via a second protocol,
> ***wherein said layer 2 switch is transparent to said layer 3 portion***.
> (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Gale* and *Heeren* and *Dantu* fails to suggest at least the features of claim 11 highlighted above. Thus, the 35 U.S.C. §103 rejection of claim 11 should be withdrawn.

<u>Claims 12-15</u>

Claims 12, 14, and 15 presently stand rejected in the Office Action under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*. In addition, claim 13 presently stands rejected in the Office Action under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*, further in view of *Singh*. Applicants submit

- 16 -

that the pending dependent claims 12-15 contain all features of their respective independent claim

11. Since claim 11 should be allowed, as argued hereinabove, pending dependent claims 12-15

should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600

(Fed. Cir. 1988).

Claim 16

Claim 16 presently stands rejected under 35 U.S.C. §103 as allegedly being unpatentable

over *Gale* in view of *Heeren* and *Dantu*. Claim 16 reads as follows:

> 16. A method for use in a network router, comprising the steps of:
> using a layer 3 protocol stack within said network router to provide a plurality of data packets, said layer 3 protocol stack including a routing table specifying route information for said plurality of data packets;
> inserting said route information into each of said plurality of data packets;
> transmitting said data packets from a first layer 1 communication interface over a primary data path to a second router via a first protocol and from a second layer 1 communication interface over a backup data path to said second router via a second protocol;
> transmitting each of said data packets to one of a plurality of layer 3 network interfaces within said network router;
> **detecting, via said layer 3 protocol stack, a layer 3 error condition associated with said primary data path**;
> **transmitting at least one of said data packets from said one layer 3 network interface to a first layer 2 protocol stack of a plurality of layer 2 protocol stacks within said network router**, and
> **changing which of said plurality of layer 2 protocol stacks receives said data packets based on said detecting step without updating said layer 3 protocol stack based on said detecting step such that at least one of said data packets is received by a second layer 2 protocol stack of said plurality of layer 2 protocol stacks within said network router**,
> wherein each of said data packets received by said first layer 2 protocol stack is transmitted over said primary data path and each of said data packets received by said second layer 2 protocol stack is transmitted over said backup data path. (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1,

Applicants respectfully assert that the alleged combination of *Gale*, *Heeren*, and *Dantu* fails to

suggest at least the features of claim 16 highlighted above. Thus, the 35 U.S.C. §103 rejection of claim 16 should be withdrawn.

Claim 19

Claim presently stands rejected under 35 U.S.C. §103 as allegedly being unpatentable over *Gale* in view of *Heeren* and *Dantu*. Claim 19 reads as follows:

> 19. A network router, comprising:
> memory;
> a layer 1 portion having a first communication interface and a second communication interface, wherein said first communication interface is configured to transmit to a second router via a first protocol over a primary data path through a first network, and wherein said second communication interface is configured to transmit to said second router via a second protocol over a backup data path through a second network;
> a layer 2 portion;
> a layer 3 portion having a layer 3 protocol stack, said layer 3 protocol stack having a routing table stored in said memory and configured to provide a plurality of data packets destined for a particular destination, said plurality of data packets including at least a first data packet and a second data packet, said layer 3 protocol stack configured to insert layer 3 route information into a respective header of each of said plurality of data packets based on said routing table, said layer 3 route information indicative of said primary data path, *said layer 3 protocol stack configured to detect a layer 3 error condition associated with said primary data path*, wherein said first data packet is transmitted by said first communication interface via said first protocol over said primary data path to said second router; and
> *switching logic configured to automatically initiate a layer 2 switch in said network router in response to a detection of said error condition by said layer 3 stack such that said layer 2 portion interfaces said second data packet with said second communication interface*, wherein said second data packet is transmitted by said second communication interface via said second protocol over said backup data path to said second router, and *wherein said layer 2 switch is transparent to said layer 3 portion*. (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Gale*, *Heeren*, and *Dantu* fails to suggest at least the features of claim 19 highlighted above. Thus, the 35 U.S.C. §103 rejection of claim 19 should be withdrawn.

- 18 -

CONCLUSION

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and all presently pending claims be allowed to issue. If the Examiner has any questions or comments regarding Applicants' response, the Examiner is encouraged to telephone Applicants' undersigned counsel.

Respectfully submitted,

LANIER FORD SHAVER & PAYNE, P.C.

By: _____

Jon E. Holland
Reg. No. 41,077

2101 W. Clinton Avenue, Suite 102
Huntsville, Alabama 35805
(256) 713-2264